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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/092,650

03/05/2002

Young-Sik Kim

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8512

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7590

05/17/2006

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EXAMINER

GIESY, ADAM

ART UNIT

PAPER NUMBER

2627

DATE MAILED: 05/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/092,650

Applicant(s)

KIM, YOUNG-SIK

Examiner

Adam R. Giesy

Art Unit

2627

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 February 2006.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-16 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-16 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 05 March 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 2, 5, 6, 8-10, 13, 15, and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Korth (US Pat. No. 4,866,694).

Regarding claim 1, Korth discloses a lens for an optical recording and reproducing system comprising: a plane of incidence on which a light generated from a light source is made incident (see Figure 2 - the plane which is perpendicular to the light emitting element 10 is the incident plane); a first reflection side for reflecting a light passing through a plane of incidence (Figure 2, element 27 as shown on the bottom or flat side of the lens); and a second reflection side for reflecting again the light that has been reflected on the first reflection side (element 26b), the second reflection side being formed to be an ellipsoid side (see column 5, lines 56-57), and the first reflection side and the second reflection side being coated with a reflection material (Figure 2, elements 26b and 27 – the ellipsoid side is also covered with reflective coating 27).

Regarding claim 2, Korth discloses all of the limitations of claim 1 as discussed in the claim 1 rejection above and further that one of two focal points of ellipsoidal side is positioned on the first reflection side (see Figure 1B, element F' – this focal point is formed on the first reflection side from the second reflection side).

Regarding claim 5, Korth discloses all of the limitations of claim 1 as discussed in the claim 1 rejection above and further that a point symmetrical to another focal point of the ellipsoidal side with respect to the first reflection side is positioned at the plane of incidence (see Figure 1B, elements F' and F'').

Regarding claim 6, Korth discloses all of the limitations of claim 5 as discussed in the claim 5 rejection above and further that the plane of incidence is formed convex (see unlabeled incident plane in Figure 5E).

Regarding claim 8, Korth discloses all of the limitations of claim 5 as discussed in the claim 5 rejection above and further that a hologram is formed at the plane of incidence (see column 3, line 58 thru column 4, line 3).

Regarding claim 9, Korth discloses all of the limitations of claim 1 as discussed in the claim 1 rejection above and further that one of the two focal points of the ellipsoidal side is positioned lower than the first reflection side (see Figure 2 – focal points are on element 1 which is positioned lower than the first reflection side).

Regarding claim 10, Korth discloses a lens for an optical recording and reproducing system comprising: a plane of incidence on which a light generated from a light source is made incident (see Figure 2 - the plane which is perpendicular to the light emitting element 10 is the incident plane); a first reflection side for reflecting a light passing through a plane of incidence (Figure 2, element 27 as shown on the bottom or flat side of the lens); and a second reflection side for reflecting again the light that has been reflected on the first reflection side (element 26b), the second reflection side being formed to be an ellipsoid side (see column 5, lines 56-57), and the first reflection side

and the second reflection side being coated with a reflection material (Figure 2, elements 26b and 27 – the ellipsoid side is also covered with reflective coating 27), wherein one of two focal points of ellipsoidal side is positioned on the first reflection side (see Figure 2 – focal points are on element 1 which is positioned lower than the first reflection side), and a point symmetrical to another focal point of the ellipsoidal side with respect to the first reflection side is positioned at the plane of incidence (see Figure 1B, elements F' and F'').

Regarding claim 13, Korth discloses all of the limitations of claim 10 as discussed in the claim 10 rejection above and further that the plane of incidence is formed convex (see unlabeled incident plane in Figure 5E).

Regarding claim 15, Korth discloses all of the limitations of claim 10 as discussed in the claim 10 rejection above and further that a hologram is formed at the plane of incidence (see column 3, line 58 thru column 4, line 3).

Regarding claim 16, Korth discloses all of the limitations of claim 10 as discussed in the claim 10 rejection above and further that one of the two focal points of the ellipsoidal side is positioned lower than the first reflection side (see Figure 2 – focal points are on element 1 which is positioned lower than the first reflection side).

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 3, 4, 7, 11, 12, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Korth (US Pat. No. 4,866,694) in view of Ueyanagi (US Pat. No. 6,700,856 B2).

Regarding claim 3, Korth discloses all of the limitations of claim 2 as discussed in the claim 2 rejection above. Korth fails to disclose a step on the first reflection side.

Ueyanagi discloses a solid immersion lens of a parabolic shape that contains a step on the first reflection side (see Figure 9A, element 8).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the ellipsoidal solid immersion lens as disclosed by Korth with the step as disclosed by Ueyanagi, the motivation being to create a more effective near-field light beam for higher density recording.

Regarding claim 4, Korth discloses all of the limitations of claim 3 as discussed in the claim 3 rejection above. Korth fails to disclose a step on the first reflection side.

Ueyanagi discloses a solid immersion lens of a parabolic shape that contains a step on the first reflection side (see Figure 9A, element 8), and further discloses that the step is between 0.1 and 100nm in size (see column 8, lines 1-3).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the ellipsoidal solid immersion lens as disclosed by Korth with the step with a size that falls between 0.1 and 100nm as disclosed by Ueyanagi, the motivation being to create a more effective near-field light beam for higher density recording.

Regarding claim 7, Korth discloses all of the limitations of claim 5 as discussed in the claim 5 rejection above. Korth fails to disclose that the incident plane is concave.

Ueyanagi discloses a solid immersion lens of a parabolic shape that contains a concave incident plane (Figure 9A, element 6a).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the ellipsoidal solid immersion lens as disclosed by Korth with the step with the concave incident light plane as disclosed by Ueyanagi, the motivation being to disperse or consolidate the incident light beam as required by the particular lens device.

Regarding claim 11, Korth discloses all of the limitations of claim 10 as discussed in the claim 10 rejection above. Korth fails to disclose a step on the first reflection side.

Ueyanagi discloses a solid immersion lens of a parabolic shape that contains a step on the first reflection side (see Figure 9A, element 8).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the ellipsoidal solid immersion lens as disclosed by Korth with the step as disclosed by Ueyanagi, the motivation being to create a more effective near-field light beam for higher density recording.

Regarding claim 12, Korth discloses all of the limitations of claim 11 as discussed in the claim 11 rejection above. Korth fails to disclose a step on the first reflection side.

Ueyanagi discloses a solid immersion lens of a parabolic shape that contains a step on the first reflection side (see Figure 9A, element 8), and further discloses that the step is between 0.1 and 100nm in size (see column 8, lines 1-3).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the ellipsoidal solid immersion lens as disclosed by Korth with the step with a size that falls between 0.1 and 100nm as disclosed by Ueyanagi, the motivation being to create a more effective near-field light beam for higher density recording.

Regarding claim 14, Korth discloses all of the limitations of claim 10 as discussed in the claim 10 rejection above. Korth fails to disclose that the incident plane is concave.

Ueyanagi discloses a solid immersion lens of a parabolic shape that contains a concave incident plane (Figure 9A, element 6a).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the ellipsoidal solid immersion lens as disclosed by Korth with the step with the concave incident light plane as disclosed by Ueyanagi, the motivation being to disperse or consolidate the incident light beam as required by the particular lens device.

### ***Response to Arguments***

5. Applicant's arguments with respect to claims 1-16 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Adam R. Giesy whose telephone number is (571) 272-7555. The examiner can normally be reached on 8:00am- 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William R. Korzuch can be reached on (571) 272-7589. The fax phone




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number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ARG 5/12/2006



THANG V. TRAN  
PRIMARY EXAMINER